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Framework for measuring the sustainability performance of ecodesign implementation

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Companies and academic studies are consistently reporting several potential business benefits gained from ecodesign implementation, such as increased innovation potential, development of new markets and business models, reduction in environmental liability, risks and costs, improvement of organizational brand and legal compliance, among others. However, there is a number of challenges that still hamper corporate adoption of ecodesign, mainly regarding the capture and measurement of the estimated business benefits. Furthermore, ecodesign efforts have been primarily evaluated in terms of environmental performance and product-related (technical) measures, such as shape, material and energy consumption. Because the ecodesign business benefits go beyond the pure environmental performance and its implementation should follow a consistent process-oriented integration, an approach based on the triple bottom line and focused on the managerial perspective is required to deriving a consistent business case for ecodesign.

This research aims at proposing a simulation-based framework geared towards laying out the fundamental rationale of the business case for ecodesign implementation. The study particularly builds upon the Ecodesign Maturity Model (EcoM2), a management framework that offers a systematic, step-by-step approach for the integration of ecodesign into product development processes. With more than 600 ecodesign practices systematized and organized according to maturity levels, the EcoM2 offers an application method with 4 steps,

organized in two phases (Figure 1). The simulation framework draws upon the **current** and **desired capabilities** of ecodesign practices, and offers an integrative outlook into how capability building will potentially affect corporate indicators over time, such as revenue, market share, expenses, risk, employee productivity, among others. It is expected that decision makers use the business case simulator to assess the potential benefits of ecodesign and test multiple scenarios (what-if questions) with a view to deriving more robust implementation policies, in alignment with corporate sustainability strategy and main drivers.

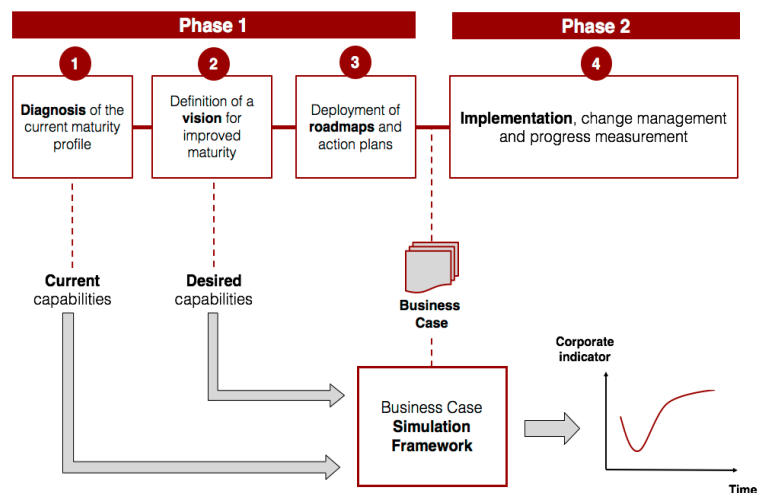


Figure 1 – Schematic representation of the use of the business case simulation framework within ecodesign implementation efforts